CLAIMS

What Is Claimed Is:

- 1 1. A spa system including a remote control for
- 2 controlling operation thereof, said system comprising:
- 3 a. a remote control module having a microprocessor
- 4 and memory therefor and receptive to push-button inputs
- 5 and having a display thereon, and having a first antenna
- 6 for transmitting signals to said spa and for receiving
- 7 signals from said spa;
- 8 b. a master control module residing in said spa
- 9 for controlling and sensing a multiplicity of functions
- 10 of said spa; and,
- 11 c. a slave control module coupled to said master
- 12 control module and having a second antenna responsive to
- 13 command signals received from said remote control and for
- 14 transmitting status signals back to said remote control,
- 15 said slave control module being disposed for converting
- 16 said command signals received from said remote control
- 17 for said master control, and for converting status
- 18 signals received from said master control for
- 19 transmission back to said remote control.
- 1 2. The system as in Claim 1 wherein a first of said
- 2 command signals received from said remote control is set
- 3 temperature.
- 1 3. The system as in Claim 1 wherein a first of said
- 2 status signals received from said master control is water
- 3 temperature.
- 1 4. The system as in Claim 1 wherein said remote control
- 2 transmits command signals and receives status signals
- 3 with the use of radio frequencies.

- 1 5. The system as in Claim 4 wherein said remote control
- 2 includes an RF transceiver coupled between an output of
- 3 said microprocessor and said first antenna.
- 1 6. The system as in Claim 1 wherein said remote control
- 2 is responsive to a reduced number of push-buttons.
- 1 7. An RF remote control for controlling an apparatus
- 2 having a master control module disposed for controlling
- 3 and sensing a multiplicity of functions of said
- 4 apparatus, said master control module having a first
- 5 antenna for receiving command signals from said remote
- 6 control and for transmitting status signals back to said
- 7 remote control, said remote control comprising:
- 8 a. a processor;
- 9 b. memory coupled to said processor;
- 10 c. push-buttons coupled to inputs of said
- 11 processor and disposed for providing input data for
- 12 transmission to said apparatus;
- d. a second antenna for transmitting command
- 14 signals to said apparatus and for receiving status
- 15 signals back from said apparatus; and,
- e. a display for showing data indicative of said
- 17 status signals received from said apparatus.
- 1 8. The remote control as in Claim 7 wherein said remote
- 2 control includes a reduced number of push-buttons.
- 1 9. The remote control as in Claim 7 wherein said remote
- 2 control includes an RF transceiver coupled between an
- 3 output of said processor and said first antenna.
- 1 10. In a remote control for an apparatus having a master
- 2 control module disposed for controlling and sensing a

- 3 multiplicity of functions of said apparatus, a method for
- 4 transmitting command signals to said master control
- 5 module from said remote control and for receiving status
- 6 signals back from said master control module, said method
- 7 comprising:
- 8 a. after initialization, turning on a back light
- 9 in said remote control;
- 10 b. determining if a push-button on said remote
- 11 control has been depressed, and if so;
- 12 c. resetting a timer and placing said remote
- 13 control in transmit mode;
- 14 d. transmitting a data signal to said apparatus
- 15 indicative of said depressed push-button;
- e. resetting a timer and placing said remote
- 17 control in receive mode; and,
- 18 f. receiving and displaying said status signal
- 19 received from said master control.
- 1 11. The method as in Claim 10 wherein it is determined
- 2 that a push button has not been depressed, further
- 3 including the steps of:
- 4 a. determining if a 15 second timer has expired,
- 5 and if so;
- 6 b. turning off the back light of said remote
- 7 control.
- 1 12. The method as in Claim 10 wherein no push button has
- 2 been depressed for over two minutes, further including
- 3 the steps of:
- 4 a. placing said remote control in a sleep mode;
- 5 b. determining if a push button has been
- 6 depressed, and if not;
- 7 c. putting said remote control off line.

- 1 13. The method as in Claim 10 further including the step
- 2 of placing said remote control in a normal receive mode.
- 1 14. The method as in Claim 13 further including the
- 2 steps of:
- 3 a. determining if data is requested, and if so;
- b. sending request to said master control;
- 5 c. listening for a reply from said master control,
- 6 and if valid data is received;
- 7 d. displaying said valid data.
- 1 15. The method as in Claim 14 further including the step
- 2 of determining if more than two requests for data have
- 3 been made, and if so, clearing said display of said
- 4 remote control.
- 1 16. In a remote control for controlling a spa having a
- 2 master control module disposed for controlling and
- 3 sensing a multiplicity of functions of said spa, a method
- 4 for transmitting command signals to said master control
- 5 module from said remote control and for receiving status
- 6 signals back from said master control module, said method
- 7 comprising:
- 8 a. after initialization, turning on a back light
- 9 in said remote control;
- 10 b. determining if a push-button on said remote
- 11 control has been depressed, and if so;
- 12 c. resetting a timer and placing said remote
- 13 control in transmit mode;
- 14 d. transmitting a data signal to said spa
- 15 indicative of setting water temperature thereof;
- e. resetting a timer and placing said remote
- 17 control in receive mode; and,

- 18 f. receiving and displaying data representative of
- 19 water temperature sensed in said spa by said master
- 20 control.
- 1 17. A storage medium encoded with machine-readable
- 2 computer program code for use in a remote control for
- 3 controlling a spa having a master control module disposed
- 4 for controlling sensing a multiplicity of functions of
- 5 said spa, wherein, when the computer program code is
- 6 executed by said remote control, the remote control
- 7 performs a method for transmitting command signals to
- 8 said master control module from said remote control and
- 9 for receiving status signals back from said master
- 10 control module, said method comprising:
- a. after initialization, turning on a back light
- 12 in said remote control;
- b. determining if a push-button on said remote
- 14 control has been depressed, and if so;
- 15 c. resetting a timer and placing said remote
- 16 control in transmit mode:
- 17 d. transmitting a data signal to said spa
- 18 indicative of setting water temperature thereof;
- 19 e. resetting a timer and placing said remote
- 20 control in receive mode; and
- 21 f. receiving and displaying data representative of
- 22 water temperature sensed in said spa by said master
- 23 control.
- 1 18. The medium as in Claim 17 further including the step
- 2 of placing said remote control in a normal receive mode.
- 1 19. The medium as in Claim 18 further including the
- 2 steps of:

- 3 a. determining if data is requested, and if so;
- b. sending request to said master control;
- 5 c. listening for a reply from said master control,
- 6 and if valid data is received;
- 7 d. displaying said valid data.
- 1 20. The medium as in Claim 19 further including the step
- 2 of determining if more than two requests for data have
- 3 been made, and if so, clearing said display of said
- 4 remote control.